

**TIME MULTIPLEXED MULTI-CARRIER TRANSMITTER**

**ABSTRACT OF THE DISCLOSURE**

A time multiplexed multiple carrier transmitter includes a first data encoder that produces first transmit data and a second data encoder that produces second transmit data. In addition, the transmitter includes a digital multiplexer coupled to the first and the second data encoders. The digital multiplexer provides a transmit signal output. A transmit frequency upconverter coupled to a power amplifier and the transmit signal output provides a final upconversion (or direct upconversion) to a transmit frequency for each channel. The transmitter also includes a multiplexer control circuit coupled to the digital multiplexer through a multiplexer control input. The multiplexer control circuit produces a multiplexer control signal on the multiplex control input that selects between the first and second data encoders according to a transmit schedule. The transmit schedule determines when, at the frequency at which, the transmitter selects and transmits data from each data encoder.